

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Phillip W. Barth et al

Serial No.:

Examiner:

Filing Date:

Group Art Unit:

Title: ADJUSTABLE NANOPORE, NANOTOME, AND NANOTWEEZER



COMMISSIONER FOR PATENTS

Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 Processing fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97 (d) together with a:
☐ Statement under 37 CFR 1.97(e), and
☐ a \$180.00 processing fee under 37 CFR 1.17(p).
(Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee)

Please charge to Deposit Account **50-1078** the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **50-1078** pursuant to 37 CFR 1.25.

☐ Applicant(s) submit herewith Form PTO 1449. All the references identified herein were disclosed in Patent Application No. _____ filed _____, now U. S. Patent No. _____, and, as such, copies thereof are not included pursuant to the provisions of 37 CFR 1.98(d).

☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

"Express Mail" label no. **EL722215625**

Date of Deposit **Oct 30, 2001**

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Washington, D.C. 20231.

By

Mary Urbach

Typed Name: **Mary Urbach**

Respectfully submitted,

Phillip W. Barth et al

By

David W. Collins

David W. Collins

Attorney/Agent for Applicant(s)

Reg. No. **26,857**

Date: **Oct 30, 2001**

FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

10003870-1

SERIAL NO.

(Filed Herewith)

APPLICANT

Phillip W. Barth et al

FILING DATE

(Filed Herewith)

GROUP

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME
	1A	4,343,993	8/10/82	Binnig et al
	1B	5,795,782	8/18/98	Church et al
	1C	6,055,344	4/25/00	Fouquet et al
	1D	5,699,462	12/16/97	Fouquet et al
	1E	5,960,131	9/28/99	Fouquet et al
	1F	5,954,079	9/21/99	Barth et al
	1G	5,842,387	12/1/98	Marcus et al
	1H			
	1I			
	1J			
	1K			

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	NAME	TRANSLATION	
					YES	NO
	1L					
	1M					
	1N					
	1O					
	1P					

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

1Q	MinFeng Yu et al, "Three-dimensional manipulation of carbon nanotubes under a scanning electron microscope", Nanotechnology, Vol. 10, No. 3, pp. 244-252 (September 1999)
1R	J. Appenzeller et al, "Scheme for the fabrication of ultrashort channel metal-oxide-semiconductor field-effect transistors", Applied Physics Letters, Vol. 77, No. 2, pp. 298-300 (10 July 2000)
1S	S.K. Ghandhi, "VLSI Fabrication Principles: Silicon and Gallium Arsenide", John Wiley & Sons, New York, pp. 8-10 (1983) ISBN 0-471-86833-7

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2Q	C. Cowache et al, "Evaluation of advanced pre-gate cleanings", Cleaning Technology in Semiconductor Device Manufacturing. Proceedings of the Sixth International Symposium, Electrochemical Society Proceedings, Vol. 99-36, pp. 59-68 (2000)
2R	J.N. Israelachvili, "Intermolecular and Surface Forces", Section 10.7, pp. 14-15, 54-57, and 168-175, Academic Press, New York, (1995)
2S	S.K. Ghandi, "VLSI Fabrication Principles: Silicon and Gallium Arsenide", Wiley-Interscience, p. 5 (1983) ISBN 0-471-86833-7

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OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

3Q	V. Milanovic et al, "Deep Reactive Ion Etching for Lateral Field Emission Devices", IEEE Electron Device Letters, Vol. 21, No. 6, pp. 271-273 (June 2000)
3R	R.B. Marcus et al, "The Oxidation of Shaped Silicon Surfaces", The Journal of the Electro-Chemical Society, Vol. 129, No. 6, pp. 1278-1282 (1982)
3S	R.B. Marcus et al, "Formation of silicon tips with < 1 μ m radius", Applied Physics Letters, Vol. 56, No. 3, pp. 236-238 (15 January 1990)

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4Q	T.S. Ravi et al, "Oxidation sharpening of silicon tips", Journal of Vacuum Science and Technology, Vol. B9, No. 6, pp. 2733-2737 (Nov/Dec 1991)
4R	W.R. Ashurst et al, "Dichlorodimethylsilane as an Anti-Stiction Monolayer for MEMS", Journal of Microelectromechanical Systems, Vol. 10, No. 1, pp. 41-49 (March 2001)
4S	Bruce Alberts et al, "The Molecular Biology of the Cell", 3rd ed., Garland Publishing, New York, pp. 408-413 (1994) ISBN 0-8153-1619-4

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5Q	W. Vercoutere et al, "Rapid discrimination among individual DNA hairpin molecules at single-nucleotide resolution using an ion channel", Nature Biotechnology, Vol. 19, No. 3, pp. 248-252 (March 2001)
5R	T.R. Albrecht et al, "Microfabrication of integrated scanning tunneling microscope", Journal of Vacuum Science Technology, Vol. A8, No. 1, pp. 317-319 (Jan/Feb 1990)
5S	B. Alberts et al, "Molecular Biology of the Cell", Garland Publishing, 3rd ed., pp. 89-138 (1994)

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6Q	D.N. Petsev et al, "Evidence for Non-DLVO Hydration Interactions in Solutions of the Protein Apoferritin", Physical Review Letters, Vol. 84, No. 6, (7 Feb 2000)
6R	K. Vepa et al, "A Method for Native Oxide Thickness Measurement", Electrochemical Society Proceedings, Vol. 95-20, pp. 358-365
6S	J. Li et al, "Ion-Beam Sculpting at Nanometre Length Scales", Nature, Vol. 412, pp. 166-169 (12 July 2001)

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	7Q	Tersoff, "Less is More", Nature, Vol. 412, pp. 135-136 (12 July 2001)
	7R	
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